AUTHOR CONTRIBUTIONS

Conception and design: ML, KD, DM
Analysis and interpretation: KD, ML, ZR, DM
Data collection: KD, ZR, ML, DM
Writing the article: KD, ML
Critical revision of the article: KPD, ZR, ML, TP, TF, FV, DM
Final approval of the article: KD, ZR, ML, TP, TF, FV, DM
Statistical analysis: KD
Obtained funding: Not applicable
Overall responsibility: DM

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Submitted Jul 26, 2009; accepted Sep 19, 2009.

INVITED COMMENTARY

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This article describes a novel method of performing transsternal debranching of aortic arch branch vessels using a combination of open surgical and endovascular techniques. The authors conclude that in their hands, the technique is safe and minimizes cerebral ischemia-reperfusion injury; however, long-term results and technique reproducibility from other vascular centers are lacking. This commentator also believes that the described telescoping anastomosis technique is likely much more difficult to perform in 3 minutes or less than the article portrays.

In essence, the anterior wall of each target arch branch vessel is dissected and exposed to facilitate subsequent needle puncture and guidewire insertion. Simultaneously, a feeding multilimb graft is attached to a relatively disease-free segment of the ascending aorta. Fig 2 then demonstrates that a guidewire must traverse through the main body of the feeding graft, then through a graft limb, and then into a target aortic arch branch vessel—I would love to see this particular maneuver performed in real-time. Then, 5-cm-long Viabahn or Hemobahn stent grafts (W. L. Gore and Associates, Flagstaff, Ariz) are loaded onto the guidewire and inserted about 2 cm into each target arch branch vessel and deployed. The proximal end of the stent graft is then deployed about 3 cm into the traversed feeding graft limb. Apparently, sutures are required at the stent graft/feeding graft limb interface to prevent stent graft slippage but not at the stent graft/target vessel interface. Finally, the origin of the target aortic arch branch vessel is ligated or clipped. Imaging requirements for the technique, if any, are not well described.

This technique has advantages, as the authors pointed out in their discussion. However, a severely diseased ascending aorta would clearly preclude this type of hybrid procedure, and heavily diseased target arch branch vessels would greatly complicate the approach and likely increase the not insignificant risk of neurologic sequelae.

Like any other novel surgical technique, those who thought about it first consider it to be routine in their practice, while the rest of us sitting on the sidelines wondering would really like to have a bird's-eye view of the authors in action to quell the uneasiness. Fortunately, most vascular surgeons don't sit still very well, and other surgeons will soon report their experience with this seemingly challenging procedure.